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# The Third Conference on Theoretical Aspects of Reasoning about Knowledge

## Final Report on Grant # F49620-90-C-0020

The Third Conference on Theoretical Aspects of Reasoning about Knowledge was held at the Asilomar Conference Center in Pacific Grove on March 4-7, 1990. Seventy nine papers, covering aspects of reasoning about knowledge in artificial intelligence, computer science, economics, and philosophy, were submitted in response to a call for papers. The program committee considered all the papers carefully; at least three and usually four committee members read each paper. In the end, nineteen papers were selected based on their contribution, novelty, interest to an interdisciplinary audience, and relevance to the scope of the conference. In addition to the contributed papers, the program included tutorial sessions and an invited talk, intended to provide an overview of several topics. The proceedings of the conference were published by Morgan Kaufmann Publishers.

The program committee was chaired by Rohit Parikh and consisted of Nicholas Asher, Cristina Bicchieri, Fred Dretske, Jon Doyle, Ronald Fagin, Mike Fischer, Haim Gaifman, John Geanakoplos, Shafi Goldwasser, Kurt Konolige, Isaac Levi, Rohit Parikh and Robert Stainaker. The conference was sponsored by IBM Research, Almaden Research Center. The conference was also supported by a grant from the American Association for Artificial Intelligence and by the Air Force Office of Scientific Research (AFSC) under Contract F49620-90-C-0020.

**Moshe Y. Vardi**  
IBM Almaden Research Center  
Conference Chair

### List of papers:

#### SESSION 1

K. Konolige, Nonmonotonic Reasoning (Tutorial)

#### SESSION 2

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R. Parikh, Recent Issues in Reasoning about Knowledge (Tutorial)  
N. Asher, Intentional Paradoxes and an Inductive Theory of Propositional Quantification  
R. H. Thomason, Propagating Epistemic Coordination Through Mutual Defaults I  
R. Fagin, J. Y. Halpern, and M. Y. Vardi, A Nonstandard Approach to the Logical Omniscience Problem

### SESSION 3

D. Lehmann and M. Magidor, Preferential Logics: the Predicate Calculus Case  
M. Tiomkin and M. Kaminski, Nonmonotonic Default Modal Logics  
K. Konolige, Explanatory Belief Ascription  
G. Shvarts, Autoepistemic Modal Logics  
F. Lin and Y. Shoham, Epistemic Semantics for Fixed-Points Non-Monotonic Logics  
J. Pearl, System Z: A Natural Ordering of Defaults with Tractable Applications to Nonmonotonic Reasoning

### SESSION 4

R. Stalnaker, Semantics for Conditionals (Tutorial)

### SESSION 5

J. Geanakoplos, Common Knowledge in Economics (Tutorial)  
P. J. Krasucki, Reaching Consensus on Decisions  
Y. Moses and G. Nachum, Agreeing to Disagree After All  
B. Allen, Costly Acquisition of (Differentiated) Information

### SESSION 6

B. Skyrms, Dynamic Models of Deliberation and the Theory of Games (Invited Paper)  
I. Gilboa, A Note on the Consistency of Game Theory  
B. L. Lipman, On the Strategic Advantages of a Lack of Common Knowledge

**S. Jain and A. Sharma, Hypothesis Formation and Language Acquisition with an Infinitely-Often Correct Teacher**

**SESSION 7**

**E. Spaan, Nexttime is not Necessary**

**S. Artemov, Kolmogorov's Logic of Problems and a Provability Interpretation of Intuitionistic Logic**

**M. L. Ginsberg, Bilattices and Modal Operators**

**M. S. Mazer, A Link Between Knowledge and Communication in Faulty Distributed Systems**